Table 5 - Comparative Analysis of Alternatives
OU1 Record of Decision—Allied Paper, Inc./ Portage Creek/Kalamazoo River Superfund Site

Alternative	Description	Overall Protection	Compliance with ARARs	Long-term Effectiveness	Reduction of Toxicity, Mobility, or Volume through Treatment	Short-term Effectiveness	Implementability	Cost
Alternative 1	**No Action**							
		Not protective. No action would be taken.	Would not meet ARARs	Not effective. Site conditions would remain the same.	No reduction of toxicity, mobility, or volume.	No worker risks. No action to be taken.	Implementable as no action would be taken.	$110,000
Alternative 2	**Consolidation and Capping**							
2A	Construct caps on both Monarch and Operations areas	Protective. Remaining exposed contamination would be covered and contained. Infiltration of surface water would be minimized.	Meets ARARS	Effective. Larger landfill footprint requiring O&M than Alternatives 2B, 2C, and 2D.	No reduction of toxicity, mobility, or volume would be achieved.	Implementation over 2-year period, most effective of active alternatives. Worker risk associated with dermal contact, inhalation, and ingestion. Risks are controllable. Community impacts: associated dust, noise, and traffic.	Proven technology has been implemented at similar OUs.	$44,000,000
2B	Consolidate Monarch within Operations areas	Protective. Remaining exposed contamination would be covered and contained. Consolidation of the Monarch HRDL within the operations area would reduce the amount of monitoring required.	Meets ARARS	Effective	No reduction of toxicity, mobility, or volume would be achieved.	Implementation over 2-year period, slightly longer than 2A. Worker risk associated with dermal contact, inhalation, and ingestion. Risks are controllable. Community impacts: associated dust, noise, and traffic.	Proven technology has been implemented at similar OUs. Combining Monarch on the Operations Area would reduce the footprint of contamination.	$43,000,000
2C	Consolidate Monarch within operations areas and transport excavated soils with PCBs >500 mg/kg off site for incineration	Protective. Remaining exposed contamination would be covered and contained. Consolidation of the Monarch HRDL within the operations area would reduce the amount of monitoring required. Off-site incineration of some of the highest PCB concentrations would be slightly more protective.	Meets ARARs	Effective	Reduction of toxicity and volume would be achieved through treatment of a portion of the material.	Implementation over 2-year period, slightly longer than 2A and 2B. Worker risk associated with dermal contact, inhalation, and ingestion due to increased management with characterization and segregation. Risks are controllable. Community impacts: associated dust, noise, traffic, and off-site transportation of contaminated materials.	Proven technology has been implemented at similar OUs. Combining Monarch on the operations area would reduce the footprint of contamination. TSCA-permitted incinerators are in limited quantity. Identifying, segregating and shipping make 2C more difficult to implement.	$70,000,000
2D	Consolidate Monarch and portions of Operations Areas under an approximate 27 acre cap.	Protective. Remaining exposed contamination would be covered and contained.	Meets ARARs	Effective. Increased O&M requirements over Alternatives 2A, 2B, and 2C. Community stewardship may help facilitate the monitoring and maintenance of the cap and effectiveness of controls. Provides larger clean buffer along Portage Creek.	No reduction of toxicity, mobility, or volume would be achieved.	Implementation over 3-year period is longer than 2A, 2B, or 2C resulting in increases to worker risk associated with inhalation and ingestion. Community impacts: associated dust and noise during construction and increased traffic associated with trucking backfill materials.	Proven technology has been implemented at similar OUs. Implementability challenges are increased due to the consolidation on a smaller footprint resulting in a taller landfill. Additional stabilization measures may be required.	$63,000,000

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Subalternative (i)	Groundwater collection and treatment system	Protective. Achieves RAO 3 with collection and treatment of potentially impacted groundwater.	Meets ARARs	Effective	Provides some reduction of volume through treatment of PCBs in groundwater. However, minimal contaminant mass is present in the groundwater.	Manageable risk associated with the installation of wells and construction of treatment system.	Proven technology.	$4,400,000 for Alternative 2A $4,300,000 for Alternative 2B, 2C or 2D
Subalternative (ii)	Groundwater collection and treatment system with slurry wall	Achieves RAO 3 with collection and treatment of potentially impacted groundwater, but may create mounding or otherwise alter groundwater flow.	Meets ARARs	Effective	Provides some reduction of volume through treatment of PCBs in groundwater. However, minimal contaminant mass is present in the groundwater.	Increased short-term risks to construction worker and environment over subalternative (i) during installation of the slurry wall. Community impacts; associated dust, noise, and traffic associated with slurry wall construction.	Proven technology. Implementation may result in groundwater mounding or short-circuiting around the barrier if operation of the groundwater treatment system ceased.	$14,000,000 for Alternative 2A $12,000,000 for Alternative 2B, 2C or 2D
Alternative 3	**Total Removal and Off-site Disposal**	Protective. Contamination would be disposed of at an approved landfill facility both hazardous and non-hazardous.	Meets ARARS	More effective than Alternative 2 due to removal from OU1. No cover maintenance or source for potential groundwater impacts.	No reduction of toxicity, mobility, or volume would be achieved. Volume may be increased if soils require dewatering by addition of cement.	Implementation over 5-year period. Worker risk associated with dermal contact, inhalation and ingestion would occur over a longer period of time. Risks are controllable. Community impacts: associated dust, noise, and traffic.	Proven technology, landfill space in the area could be limited requiring the hauling of waste a significant distance from OU1.	$238,000,000
Alternative 4	**Encapsulation Containment System**	Protective. Little advantage achieved by construction of the liner. Compacted waste can already achieve 1×10^{-7} centimeters per second hydraulic conductivity, limiting groundwater flow through the material.	Meets ARARS	More effective than Alternative 2. The source material is fully encapsulated further minimizing potential for groundwater impacts.	No reduction of toxicity, mobility, or volume would be achieved.	Implementation over 10-year period. Worker risk associated with dermal contact, inhalation, and ingestion would occur over a longer period of time. Risks are controllable. Community impacts: associated dust and noise is the least short-term effective alternative.	Proven technology.	$159,000,000